THE

PROGRESS OF MEDICINE:

AN

INTRODUCTORY LECTURE

DELIVERED IN THE

University of Louisville,

ON THE

Evening of October 4th, 1869,

BY

DAVID W. YANDELL, M. D.,

Professor of Clinical Surgery.

LOUISVILLE, KY.

BRADLEY & GILBERT, PRINTERS, COR. THIRD AND GREEN STREETS.

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Correspondence.

University of Louisville,
October 10, 1869.

Prof. D. W. Yandell—

Dear Sir—We, a committee appointed in behalf of the Medical Class, return you our sincere thanks for the beautiful address delivered at the opening of the Collegiate year, on the 4th inst., and request a copy of the same for publication.

Most respectfully,

Wm. O. Roberts, Ky.
Henry Cochran, Penn.
J. B. Hanna, Tenn.
M. M. Burke, Ala.
J. M. Wolf, Ark.
J. F. McDaniel, Tex.
A. A. Thompson, La.
Mael L. Henry, Ga.
J. W. Douglas, Miss.
Jno. McClelland, Ill.
Marcus N. McClellan, Mo.
Elisha G. Wilson.

WM. H. WATHEN, Ky., Ch'n Com.

Louisville, October 11, 1869.

Messrs. Wm. O. Roberts, A. A. Thompson, etc.—

Gentlemen—Your flattering note of yesterday has been received, and in reply I send you a copy of my Introductory Lecture.

Very respectfully yours,

D. W. YANDELL.

LECTURE.

GENTLEMEN—The first medical lecture heard by a student of medicine forms an era in his life to which he will recur with interest as long as he lives. He has, in most instances, left home, with all its endearments, and is in the midst of strangers, associated with fellow-students eager like himself for knowledge and ambitious of excellence. He has taken a decided step forward in the profession which is to be his future calling. He has entered upon a race and knows that the eyes of all he loves are upon him. He has struck the first blow in a battle which he expects to wage until he dies. When he shall return home at the close of the lecture term, he is aware that he will be styled "Doctor" by his acquaintances and be expected to know much about medicine. There is an excitement growing out of the novelty of the occasion which he can never experience again.

At the threshold of medicine, where most of you stand this evening, it is important that you should conceive just views of the character of your profession. No man, it has been justly said, is likely ever to attain to greatness who has not a feeling that there is something in him great. It is quite as true that no physician will ever rise to eminence in his profession who has not exalted conceptions of its worth. If he regards it as a trade, by which he proposes simply to earn a living, he will be pretty sure to pursue it in the spirit of a tradesman. If, esteeming it something lower than that, he adopts it as an art by which he may practice upon the credulity of the people, he sinks into the character of the charlatan. But if, on the other hand, he looks upon it as a science broad and liberal, and an art at once benign and efficacious, he will enter upon its study with a spirit that will be likely to carry him to a high place among its votaries.

The return of this anniversary of the University of Louisville, the opening of its thirty-third session, affords a suitable occasion for taking a brief survey of Medicine and determining what progress it has made in this third of a cen-

tury. The retrospect is one which must gratify the pride of every physician. I trust it will inflame you with a noble ambition, not only to master what is known in the profession, but to improve and extend its resources. I deem this review the more proper at this time because it has been rather the fashion in certain quarters of late to deplore the decadence of medicine; to speak of it as being less respectable than it was at some former period of its history; to express doubts of the efficacy of drugs in controlling disease, or, at least, as to our having improved upon the practice of our forefathers. So far from retrograding, it will be my purpose in the following remarks to show you, that the profession never made such progress in any age since the times of Hippocrates as it has made in our own times, and never before stood in an attitude to command so much of the respect and gratitude of men. And in regard to that skepticism which even medical men sometimes avow concerning the curative power of medicines, I think it can be easily shown that it was never so unfounded as it is to-day.

When your fathers were students of medicine, "Theory and Practice of Physic," and "Theory and Practice of Surgery," were the phrases in use. We use the terms Science and Art of Medicine, and Science and Art of Surgery. The meaning of the terms is the same, and they imply that there is a science and an art of medicine and of surgery. These are not the same thing, nor do they necessarily go hand in hand together. Science may exist unapplied—art may be pursued without the guidance of science. Art, it has been said, furnishes hands, and science eyes; and "as science without art is inefficient, so art without science is blind." It is in blindness, if this be true, that the practice of physic has been for the most part pursued. A few practitioners, in all periods of medical history, have applied themselves to the cultivation of the science of medicine, some with but little reference to the art; but by far the larger number have busied themselves with the art without any concern about the science. And thus it happens that in almost every age of the profession its art has been far in advance of its science. Remedies were prescribed successfully in many diseases when the functions of the animal economy were still a mystery, and little was known of the morbid states for which medicines were administered.

But the case stands quite otherwise in our day. The science of medicine now is far in advance of the art, insomuch that while comprehending fully the nature of the morbid change, we have often to confess that our remedial re-

sources afford no cure for it. In a single lecture it will, of course, be impossible to do more than mention a few of the more remarkable contributions which, in the last thirty years, have been made to medical science.

Of vast tracts of disease witnessed daily in the practice of Cullen, we fail to find anywhere in his works the least sign of recognition. He knew nothing, for example, of diseases of the heart. He could have given us no positive knowledge of his method of determining whether a patient had pleurisy, pneumonia, or pericarditis. There are many medical men now alive who passed through their pupilage in renowned medical schools without ever hearing the name of Laennec. Among those who were content with the conjectures of Sydenham, and who were compelled to grope in the dark with Cullen, the announcement of mediate auscultation, through the stethoscope, was deemed simply a vagary. The youngest physician of to-day, enlightened by a knowledge of auscultation and percussion, may pronounce with certainty upon diseased actions that would have baffled Sydenham in the full meridian of his medical powers. The stethoscope has borne a prominent part in the revolution, some of the leading features of which I am endeavoring to portray. A knowledge of it is indispensable. Without it the practitioner can never attain accuracy in a long catalogue of diseased processes, or select remedies appropriate for their relief. In an extensive field of most important diseases it would be better to turn the physician loose among patients without medicine than without training in auscultation and percussion.

It is a fact familiar to all practitioners that a patient may be shivering with cold, and to the most delicate touch feel cold, while the real temperature of the body is considerably exalted above the natural standard. De Haen, of Vienna, was among the first who taught that the hand could not be trusted to determine the heat of the body, and that the thermometer must be called to our aid. He had wonderfully correct conceptions of the value of exact knowledge of the varying temperature of various diseases. We know what problems he strove to solve. We know what results he saw would follow their solution, but the mechanical skill of his day was unable to furnish an instrument adequate to the purposes of his thoughtful mind. The realization of the splendid conceptions which filled his brain was reserved for our times. The pathological lessons which he vaguely hinted at have now passed into the daily teachings of the schools.

The physician of every age has counted the pulse and the respirations of the

sick; he now, with the thermometer, measures their temperature as well. The stethoscope and the thermometer alone have placed the science of modern medicine far above the medical science of all the preceding ages. The illustrious Chomel, one of the greatest of French physicians, and among my earlier teachers, devoted himself with singular assiduity to the study of the elementary features of typhoid fever, whereby to determine positively its existence. After years of survey of the various phenomena he reached this conclusion: If certain conditions show a certain order of occurrence, and persist through a period of time comprised within from three to four weeks, we may conclude that the disease is typhoid fever. Such were the teachings of one who was esteemed a consummate master of his art—of one over whom the grave has but recently closed. In 1855, Dr. Parkes, in his lectures on the "Proximate Cause of Fever," said: "I shall have to allude to inexplicable phenomena, to vast spaces still unfilled by solid facts, to spots unknown to observation, and to regions lighted only by the dim and treacherous ray of speculation." We often had, in typhoid fever, worse than these perplexities. But the evils which beset the illustrious Chomel have been wholly removed from our path. We are no longer misled by the treacherous lights which confused him. We are able to avoid the quagmires in which he sank, and, through the aid of the thermometer, advance with certainty to the goal of positive diagnosis. Nor is it in typhoid fever alone that the thermometer is of such decided value. The discovery abounds in valuable fruits in nearly every field of pathology; indeed, in all pathological tissue-changes.

The variation of a single degree above or a single degree below the healthy standard of the body, if it but persist for any length of time, invariably denotes mischief. If the mercury rises above, it indicates one form of diseased action. If it falls below, it points to another and very different character of the disease. Each pathological status has its determinate temperature. On this law all the rest hinges. This is our point of departure. The thermometer, while thus enabling us to recognize the special disease before us, is equally valuable in determining what progress the disease is making—whether it is stationary, or moving toward health, or toward death.

Another important element of modern progress, at which I can only glance, is the recognition of the existence of certain diseased actions which are self-limited. A conspicuous example of this class of affections is furnished by intermittent fever. Each of the three stages has a determinate set of phe-

nomena, consuming a definite amount of time. They run their course. The cold stage is succeeded by the fever—this is followed by the sweat, and with its termination the paroxysm is over. The paroxysm of intermittent is typical of the self-limitations of a variety of diseased actions. Typhoid fever is another example. Before the discovery of the law of self-limitation, the practice in typhoid fever was active. The physician labored to cut it short, and the mortality was one in three cases. Under the guidance of modern research the mortality has been reduced to one in twenty-two cases.

When the microscope made possible the cellular pathology, as expounded by Virchow, it added another to the long catalogue of obligations under which it has placed the science of medicine. But a little over a generation ago, the whole doctrine of inflammation was in a most loose and confused condition. The term was applied to diverse and incongruous phenomena. The entity, which it was held to represent, was regarded as an evil, as an enemy, which must be subdued at all hazards; against which a relentless war must be waged. We have come to look upon it as often the best ally that nature has in her service to prevent what would be otherwise irreparable.

We now regard inflammation as an elevation of the two processes of nutrition—growth and disintegration. And on these, in their normal state, all healthful life depends. When their elevation is in exact parallelism, the processes of inflammation are benign. Their proper management enables us to avert disaster or prevent wide-spread evils. The suffering connected with a fractured bone may make a severe draft on our comfort; but it is small, indeed, compared with the evils of an ununited fracture. This American discovery of the true relations of inflammation and of the processes of the movement by which nature "educes good from evil," constitutes one of the most important developments ever made in this department of science. For instance: Under the most skillful practitioners, when the object and the method were to fight pneumonia as though it were a tiger to be destroyed only by successive blows, the recorded loss was one in every three cases. Under the beneficent methods which the present enlightened views of inflammation have inaugurated, the loss is not over one in twenty-five or thirty cases.

The question is one which our profession must answer at all times, what are the signs of improvement in medical science? Has the general tenure of life been increased? Has life, when compared with former epochs, been lengthened among human beings? If neither of these events has accompanied the

march of medical science, it may be a march, but it is not progress. This is very true. Our boasted advance is as nothing if it does not show an improvement in the health of communities, and an increase of the general hold on life. Such, however, is the fact. The improved condition of medical art and medical science has done both these things. Men live now in better health and for more years on the earth than they did in former times.

There are those of our brethren who, shutting their eyes to the dazzling achievements of the present, point to some remote past as the golden age of medical greatness. They seem to forget that their own work is a standing refutation of the truth of the picture they would draw. "There is constant improvement because there is constant discontent. If we were perfectly satisfied with the present, we should cease to contrive, to labor, and to save, with a view to the future." Had not Louis been discontented with what Broussais called "Medical Science," we should not now be enjoying the rich fruits of Louis' philosophical methods. If Bright and his co-laborers had been satisfied with the confused and unsafe tenets of what was called renal pathology, the world might not yet have been enriched with a contribution which is justly esteemed one of the most inestimable in medical science.

I might continue this branch of my subject very much longer, and still leave it unexhausted, but time admonishes me that I must pass on. I have said nothing of what Sanitary Science has done to increase the comfort of living and add to the length of human life. And yet sanitary science has been created in the half century in which we live. Nor have I time to do more than allude to Statistical Medicine, a field of never-failing interest, in which the laborers are bringing out most important results, and can only stop to mention Life Insurance, the creation of Vital statistics—itself a vast science productive of incalculable benefits to society. Many other contributions made to medical science in recent times I must, for the want of time, pass by unnoticed. Enough has been said to show to you something of its gratifying progress in the memory of physicians still in their prime.

This great increase of our knowledge concerning the nature and results of disease is by no means necessarily attended, as I have already had occasion to remark, by augmented power over disease. The character of the morbid processes may be accurately defined, and yet we may be wholly unable to correct them. Nay, the very perfection of our knowledge may render us only the more hopeless as to the result of all remedial efforts. That which our fathers treated as a disorder of function, we under the clear light of modern pathology

often recognize as a disease of structure. Diseases of the liver and of the brain, in which they bled and purged with great hopes of success, we regard as cases of disorganization, which afford no ground of hope. Nor in the utmost improvement of our therapeutics can we ever expect to find a cure for all the morbid conditions which may be revealed by pathology. A boundary has been set to all the operations of the human body. Its machinery must wear out and run down. Age obstructs and deranges its organization. The days of our lives are limited to three-score years and ten, and though by reason of uncommon vigor they may be occasionally extended beyond four-score years, still, from the very nature of the frame, it must at last experience decay; and alchemy there is none by which it can recover its healthful action. But apart from this natural decay of the organs of our bodies, we are servile still to those "skyey influences," as they have been termed, which have long waged so successful a warfare against our race. Through them intractable diseases continue to find their way into our systems. Unwise marriages, too, aid in maintaining the list of incurable disorders. The unhealthy organization of parents is entailed upon their offspring, and the free-will of fathers and mothers becomes the fixed fate of their children. Cancer, consumption, insanity, and mental imbecility are among the diseases thus transmitted from one generation to another. Added to all the rest, sensual indulgence comes in still further to swell the catalogue of hopeless maladies, developing cirrhosis of the liver, degeneration of the kidneys, induration and softening of the brain, and other perversions of structure as irremediable as the changes of organization wrought by age. By all these causes morbid states of the organism are induced, which, in the present condition of our art, we have no power of correcting, and which, to the end of time, must remain incurable.

But, while we are obliged to admit that the practice has not kept pace with the science of medicine, and can easily see that from the nature of things it can never attain to that state of completeness of which the science is capable, still it is flagrant injustice to our therapeutics to affirm, as some do, that they have not advanced at all. Concede to ancient medicine all that is claimed for it by the most ardent admirers of antiquity. Grant that the physicians of the age of Homer, the earliest of whom we have any record, were men of real skill, and made great cures among the soldiers of Agamemnon. I do admit it freely, for the reverence, approaching idolatry, in which they were held, proves them to have been benefactors of their people. I grant, also, that Hippocrates was a great physician, as well as a true philosopher. I admit the claims of Galen

and Dioscorides to having administered medicines wisely and well. I give full credit to Paracelsus, who was not content to sit patiently by the bedside of the sick and trust their cure to the *vis medicatrix naturæ*, but insisted on coming in with his heroic chemicals and dispelling disease by their force. I can believe that Basil Valentine, mounted on his *currus triumphalis antimonii*, though he may sometimes have driven it too fast and not always with discretion, yet made important cures by his active remedies. I heartily admit the practical skill of the learned Boerhaave, and that the observant Sydenham was a safe, a judicious, and a successful practitioner. All this is conceded to the art of former times. Medicine, in a word, I believe, has been in all its stages a boon to mankind.

Further than all this, I concede to the skeptics, who call in question the value of curative medicine, that many diseases which were formerly thought to be amenable to treatment are self-limited, and run a determinate course uninfluenced by drugs. I agree that medicines have been many times given injudiciously, and even injuriously, and that they may be still sometimes abused. I readily grant that, in many cases, the only rational course for the physician is to assist nature in her curative efforts. My old friend, once an eminent practitioner of this city, I have no doubt was often right when he said to his hypochondriacal patients, "*Take good advice*," in answer to their daily question, "What shall I take?" He justly esteemed words as quite as efficacious as bread pills or homœopathic pellets, and saw no need for active medication in their cases.

But, with all these concessions, I hold firmly to the remedial powers of our art. Cures are no less facts in the world than diseases and death. As well say that steam has not sped the commerce of the world or electricity quickened communication among the people of the earth as deny the usefulness of medicine. We of this school believe in curative medicine. We are persuaded that there is an unequivocal potency for good in many of our remedial agents, and that the number of these is constantly increasing. We repudiate utterly the notion that the proper proceeding in practice is to leave nature to herself in her contests with disease. We entirely agree with the old writer on medicine who held, that "it is scarce honorable to physicians, and would be very disgraceful to the science of physic, if it afforded no better assistance than looking on to see whether life or death is to be the consequence of their coming twice a day and receiving so many guineas." We entertain no doubt of the

ability of physicians as well to arrest disease in its fatal march, as to avert its incursions, or mitigate its attendant suffering. Never in any former age, we are persuaded, was the healing art so effective, as assuredly it was never before so enlightened as now. Like medical science, though not so rapidly, it is still steadily gaining upon the darkness. The remedies we prescribe are not, in one sense, so active as those that were in vogue half a century ago. They disturb the systems of our patients less; but they are administered with far more precise knowledge of all their effects. The power of remedial agents over disease is greater than ever it was before. The good accomplished by them was never so great, and, what is hardly inferior praise, the mischief done by them was never so small. The practice of physic, while gaining in certainty, is also fast putting off the repulsive mien which its harsh medication long compelled it to wear, and is assuming a guise which renders it "a pleasure and a strength" to the sick. Our remedies are as numerous as ever they were, and some of them we give in herculean doses, but they are not so nauseous as those which formed the *materia medica* of our forefathers. We battle less with disease than they did, and attend more to the diathesis and the vital forces of our patients. Discriminating between diseases which are amenable to treatment, and those which tend always to death; between those which may be cut short by medicine, and those which run a determinate course in spite of medicine;—the physician of our day has learned when to interpose with active remedies, when to wait upon nature and only attempt to aid her recuperative efforts, and when there is nothing reserved for his art but "to soothe the victim no device can save."

Rheumatism, which it was for a long time believed no remedies could arrest, is now with great certainty cut short by appropriate treatment; and, in addition to this, those dreaded heart complications which formerly constituted its most serious danger are effectually obviated by the modern methods of cure. Life has been lengthened in phthisis many years, and the results of recent efforts at arresting the disease in its incipient stage justify the hope, that the diathesis in which it has its origin may be finally overcome, and so the complaint which now carries off so large a proportion of the human race be practically abolished. Epilepsy, which has always been regarded as one of our most intractable disorders, is now cured in many instances. The same may be said of tetanus. Great improvements have been made in the treatment of asthma, and of all nervous affections.

In alleviative medicine, we have witnessed in our own times achievements which border upon the marvelous—discoveries which in importance

to mankind rival anything in modern science or art. For will not anæsthesia compare favorably with the electric telegraph, the great invention of our century, and, I may add, of our country? The telegraph, indeed, had been foreshadowed by cumbrous instruments, and we were in some sort prepared for its final triumph, by which continents are enabled to speak to each other across the ocean as if face to face. But when the surmise was ventured by Dr. Rush, that an agent would in time be discovered by which all pain would be annulled while the necessary processes of parturition went on undisturbed, his prediction sounded like a dream. No one seemed to be looking for its realization, and yet all, and more, than he predicted, has been fulfilled.* Pain is held in abeyance by our anæsthetics. Operations, from which torture was formerly inseparable, are now performed while the subject is asleep. Children in convulsions are at once made tranquil. Dislocations are reduced by easy efforts, of which the sufferer is scarcely conscious. Throes, the most painful known to the human frame, are endured while the patient is the subject of pleasant dreams. Limbs are amputated, calculi are extracted from the bladder, great tumors are removed with so little disturbance that patients are continually waking up after the terrible operation and asking the surgeon, "Are you ready to begin?"

I might go on for a long time remarking upon the improvements of modern medicine, but I should weary the patience of the audience which honors us with its presence; and besides this is the less necessary to you, since, in the several courses of lectures before you, it will be the business of your teachers to instruct you in all these discoveries. The thermometer in disease, hypodermic injections as a means of medication, the opthalmoscope, the laryngoscope, the microscope, the atomization of medicines, the sphygmograph, the improved methods of treatment in all maladies—all will come up in their proper places, and I may with propriety pass by them now. When you shall have heard all that is to be said of medicine as it now stands, you will be prepared to form a

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* Note.—This was no mere conjecture on the part of the American Sydenham—that "a medicine would be found which should suspend sensibility altogether, and leave irritability unimpaired, and thereby destroy labor pains altogether." It was a philosophical guess, or, more correctly, a logical deduction from facts such as led the mind of Newton to his grand discoveries. "I was encouraged to cherish this hope," says Dr. Rush, "by having known delivery to take place, in one instance, during a paroxysm of epilepsy, and having heard of another, during a fit of drunkenness, in a woman attended by Dr. Church, in both of which there was neither consciousness nor recollection of pain."

just estimate of the progress which it has made in the few years since most of you were born.

This rapid advance in medical and surgical science and art is due mainly to the wiser methods by which they have been cultivated in modern times. For while it is true that in every age of medicine some have pursued it in a philosophical spirit, with the mass of medical men the worst processes have obtained. All, for centuries together, was blind devotion to authority, mere guess, vague conjecture, wild speculation.

> "Did Marcus say 'tis fact? then fact it is,
> No proof so valid as a word of his."

That Galen said it was so was proof enough of the fact with medical men for more than a thousand years. He dissected monkeys, and inferred from their anatomy what was the structure of the human body. When human subjects were at last dissected, and it was discovered that Galen's descriptions did not apply to them, the conclusion with his disciples was that the human body had changed. Nature might vary in her course, but their great master could not err.

For a long time the work of our fathers in medicine was little else than system building. A disciple of the old philosopher of Cos now and then made experiments and observations, and multiplied facts which have come down to us, but the large body of those whose names remain were dreamers. They spun out theories in their closets to be adopted, and sworn by, and practiced upon by the multitude of their followers. The chief business of every physician who felt himself capable of advancing medical science was to frame a theory of disease. This was deemed the great desideratum in medicine. To this hard problem the medical mind of all nations was laboriously directed from the age of Galen down to the times in which we live. Each medical philosopher had the task before him, first to overthrow the theory of his predecessor, and then, upon its ruins, to erect one of his own. These wire-drawn speculations, more futile than the reveries of the alchemists, the work of scholars surrounded by their libraries, constitute the body of the medical literature in which the history of our art is written. First came the hypothesis of hot and cold, moisture and dryness, explaining by their reciprocal influence all morbid action; and this theory had an enduring reign. Then was proposed a theory of relaxation and overbracing, which accounted for all the phenomena of disease. Later, the rational soul of Stahl, and the fiery archæus of Van Helmont, watching over the human body, were created to explain all the func-

tions of the animal economy and the origin of all the ills that flesh is heir to. Then appeared the mechanical theory of "lentor and morbid viscidity" of the blood; to be followed by the chemical hypothesis of hostile alkalies and acids pervading and disturbing the economy. The theories of Boerhaave and Cullen succeeded to these; and they were met by the speculations of Brown, who resolved all diseases into the "sthenic or the asthenic class," and found in the lancet or in brandy a remedy for them all. At last America produced a teacher ready to grapple with the many sided question, and propound a theory of disease. Our great Rush saw unity in the midst of contrariety. Disease, according to him, is a unit. One of his illustrious pupils, the late Dr. John Esten Cooke, was the first Professor of Theory and Practice in this school, and he too had his theory.

Prof. Cooke is worthy of special mention here as the last of the theorists in our country. He is worthy of special mention on another account—as furnishing, in his life of fidelity to moral and Christian principle, an example worthy of the imitation of all young men. He was one of the truest men I have ever known—one of the firmest, bravest, most conscientious and upright. He was, besides, a logician and a philosopher—patient, laborious, cautious, and learned. He forged a chain of argument so compact and connected that few students could resist his logical conclusions. He believed implicitly in the truth of all he taught, and showed by his manner that it was a love of truth, and not of victory, that impelled him to press his convictions upon his pupils. His was a very simple theory—that of congestion. It was easily understood. The branches of the *vena cava*, embracing particularly the veins of the liver, in a state of engorgement from weakened action of the heart—this it was, he held, which caused fever, cholera, dyspepsia, diseases of the liver, brain; in a word, all that might be traced to venous congestion. His practice grew naturally out of his theory, and was correspondingly simple. It consisted in the use of remedies which promoted biliary secretion. First, middle, and last, it was to purge—to promote consistent alvine evacuations. This theory, accounting so plausibly for many morbid phenomena, and supported by such an array of instances as its learned author adduced in its defense, was generally accepted by the pupils of the gifted professor, and for many years it exerted a wide influence over the practice of the South. The practice, indeed, modified in many respects, still holds its ground with most of those who sat under the lectures of this great and good man. But no advocate is now found of the theory, and with it theorizing may be said to have ceased in

the school. It is referred to now as an interesting relic of the past, being the last effort here to frame a system of medicine.

When such was medicine, students flocked to schools where renowned masters taught, not to witness experiments and operations, not to make dissections, or to see disease in its many shapes, but to hear them expound their systems and listen to the details of their experience. Thus the great Boerhaave sat for years in his chair, at Leyden, with pupils gathered round him from all parts of the world, *reading* his lectures on "peccant humors," describing the fierce contests of acids and alkalies in the system, explaining how the blood was to be thinned by lenitives, and purified by sudorifics—and this was the best method of teaching medicine that then occurred to the medical mind of the world. True, late in life, Boerhaave returned to the processes of observation and experience inculcated by the father of medicine, and opened a hospital in which he lectured to his pupils on the history of the diseases before him.

Clinical medicine, never wholly neglected during all the reign of theory, thenceforward occupied a more prominent place in most of the schools. But it continued to be incidental and subordinate. The leading purpose of the pupils, as before, was still to listen to the lectures of a great teacher. Rush, Hosack, Davidge, and Brown resorted to Edinburgh from America, to hear Cullen lecture and learn Cullen's system, as Cullen had gone before to Leyden to listen to Boerhaave. They returned home to institute a similar mode of instruction. Sitting in their chairs in New York, Philadelphia, Baltimore, or Lexington, they read to our fathers and preceptors their carefully-written prelections on disease, and unfolded at length their theories of medicine. Their pupils resorted to the schools where they taught to hear what they *professed*, to drink in draughts of wisdom from their lips, and to be guided in practice by their doctrines. In the courses of lectures upon which they waited they witnessed a few chemical experiments, made, perhaps, some cursory dissections, saw an occasional bit of surgery, and walked the wards of the hospitals in crowds to hear remarks made on patients whom they were not able to see. But their chief purpose in going to the schools was to hear great teachers, not to use their hands or eyes. Their highest ambition was to master the theories of some illustrious professor. His philosophy was to be their guiding principle—his recipes their anchor in practice. Demonstration was the accident, dissertations were the rule. Material helps were nothing—the professors were everything. One great name often made the school. The chemist read from his chair accounts of the newly discovered oxygen, carbonic acid,

chlorine, and hydrogen, carefully sealed up in glass bottles; and the professor of anatomy read minute descriptions of bones and blood vessels, muscles and nerves. Dr. Drake relates of himself that the first task assigned to him on commencing the study of medicine, was to commit to memory Chesselden on the bones, and Innes on the muscles, without a skeleton, or so much as a plate to lighten his laborious duty.

How completely all this has been changed in our day I need not point out to you at any great length. You are all aware how largely demonstrations now enter into every course of medical instruction. It is not merely to hear but to see, as well, that students now repair to the medical colleges.

When a young man, now nearly twenty years ago, I took the ground in some remarks which I had the honor to make before the American Medical Association, at its meeting in Cincinnati, that medical schools must rest upon hospitals and other public charities, where disease in its progress and terminations might be studied; that the sites for them were not sequestered villages or quiet country towns, places the most favorable to the study of books, but in the din and bustle of crowded cities, where most casualties occur, and the greatest number of sick people are treated at the public expense. I contended that the schools which had not the means of imparting clinical instruction on an ample scale must eventually decay. These views, it is safe to say, are those which are now universally accepted in regard to medical teaching. The maxim of the profession has come to be, *no clinical facilities, no medical school.* The schools are now made by the clinics and the other means of demonstration. The great schools of the world are found where there is most to be learned by observation, where there are most subjects for the study of anatomy, the most patients for the study of disease, the greatest number of surgical operations to be seen, the largest and best-arranged laboratories, and the best cabinets and museums illustrating all the facts in the history of disease. Mind is as indispensable as ever to direct in the schools. Mind must preside over and marshal the materials, educe from them and indicate the lessons they teach, and guide the young student in his course of study. Teachers there must be still, not less than laboratories and museums, hospitals and subjects—teachers formed by nature as well as by education to teach—teachers who have the gift of utterance as well as the necessary stores of knowledge. Without them all material aids are unavailing. No amount of apparatus, no number of diseased people will make a physician without a master. But the master, now-a-days, is nothing without the subjects and the apparatus. You would laugh to scorn a professor

of anatomy who should come before you with a written description of the eye instead of the eye itself, or a model exhibiting its structure. You would not listen long to your most eloquent teacher of chemistry if he should content himself with reading to you about the reaction of agents hermetically sealed up in glass jars. Pupils no longer accept the *ipse dixit* of their instructor. They no longer swear in the words of some great master. They demand proof of all that is asserted. The question with them is not, what says the teacher, but what are the deductions to be made from a series of clinical cases? What do the statistics of the matter teach?—not what the professor says, is the great inquiry. And he is the *successful* teacher who enriches the minds of his pupils with the greatest number of valuable facts—who, at the same time that he makes them learned about disease, makes them also handy in its treatment, who brings before them human ailments in the greatest variety of forms, and instructs them how they may be relieved.

This, indeed, is the ideal which every conscientious teacher holds steadily in his mind, and toward which all his efforts are directed—to show how disease is to be cured—to be cured safely, speedily, and with the least discomfort to the sufferer. To this noble end all your studies have reference. It is in the expectation of being taught your profession under the best lights and in its most advanced state, that you have come here to follow the several courses of lectures in this institution. You expect to be taught by this learned Faculty how to cure disease, or how to prevent it, and how to prolong human life and alleviate human suffering. These just expectations, I believe, will not be disappointed. We greatly deceive ourselves if this school is not fashioned after the ideal which I have attempted to hold up before you as a perfect school. It will be our constant endeavor to render our courses of instruction useful to you—to illustrate everything that can be made more plain or impressive by models, or apparatus, or morbid preparations, or the living subjects of disease. We are nothing if not practical. We claim none of the respect of the profession if we are not upon the true line of professional improvement, and if the style of our teaching is not according to the spirit of the age and up to the most approved method of the times. Not that we profess to present to you a perfect school of medicine. Far from it. Imperfection attaches to all human institutions. Medicine itself is progressive, and not until it has reached its utmost limits of development can medical teaching attain to perfection. But we claim to be on the alert to catch the first intelligence of any advance in the science or the art, and to have adopted whatever there is of wise innovation in the

methods of teaching medicine in our day. Clinical in design from the beginning, we are striving to make the University more and more a School of Clinical Medicine. If any of its earlier pupils should return here this winter, they would find us in the path which Caldwell and Drake sought to tread when they were here—still drawing lessons of practice from the records of hospitals, infirmaries, and dispensaries, but with ampler materials than our city afforded at that early day. They would miss most of the familiar names which first gave luster to the school, but they would freely admit, I am sure, that we have made some improvement upon the teachings of our illustrious predecessors. Not only would they find the number of chairs increased, but would remark that far more attention is given to making every part of every course demonstrative and practical.

And so you, when you shall return to your *Alma Mater* at some distant day, will in all probability find some of us gone; but our places, I doubt not, will be filled by those who will bear our benign profession forward after us, as we claim to have carried it beyond the point where our ancestors left it, and improve upon our method of teaching as we think we have improved upon theirs. The institution cannot perish, but will grow with the growth and strengthen with the strength of the city which endowed it with its ample grounds, its spacious edifice, and its rich library and suites of apparatus. The building may fall a prey again to devouring fire, but its vigilant Trustees see to it that provision is constantly made for its reconstruction in case of such an accident. Its means for imparting medical instruction will be augmented every year with the growing population and resources of our city. A third of a century, the time not yet quite elapsed since its name first appeared in the catalogue of American medical schools, is a very brief period in the history of a foundation such as it is. The institution, indeed, may be said with perfect propriety to be yet in its infancy. Your remote descendants, when any of them, influenced by your example, repair to it to be instructed in the healing art, as you have done this evening, will find it only the more vigorous for its accumulated years, and richer in everything pertaining to medical teaching. Its corps of teachers, progressive men still, as I cannot doubt they will be, earnest, energetic, zealously laboring for the advancement of medicine, still abreast with the discoveries of their times and contributing to their number, not less elevated in moral tone than distinguished for professional learning and skill, will advance its claims still higher to the respect of the profession and the gratitude of men.